

What is Claimed is:

- 1 1. A method for remotely diagnosing a network problem in a residential network,  
2 comprising the steps of:  
3 providing a unique identifier to a network device in said residential network;  
4 reporting and updating Internet address information dynamically assigned to said  
5 network device together with said unique identifier to a web server through Internet;  
6 locating said network device using said Internet address information and said  
7 identifier; and  
8 probing said network device to remotely trouble shoot said network problem through  
9 Internet.
- 1 2. The method according to claim 1, wherein said Internet address information  
2 comprises at least one most recent IP address dynamically assigned to said network  
3 device.
- 1 3. The method according to claim 1, wherein said Internet address information  
2 comprises a plurality of most recent IP addresses dynamically assigned to said  
3 network device.
- 1 4. The method according to claim 1, wherein said Internet address information  
2 comprises ten most recent IP addresses dynamically assigned to said network device.
- 1 5. The method according to claim 1, wherein said network device is a residential  
2 gateway/router attached with a private network having a plurality of private network  
3 devices, and said method further comprises the steps of:  
4 defining a protocol for reporting network configuration of said private network from

5 said residential gateway/router to said web server through Internet, said network  
6 configuration including private network addresses of said private network devices;  
7 reporting and updating said network configuration to said web server; and  
8 probing a private network device in said private network according to the private  
9 network address associated with said private network device to remotely trouble  
10 shoot said network problem through Internet.

- 1 6. The method according to claim 5, wherein unique commands are designed to  
2 determine problems associated with said private network devices and probing a  
3 private network device is accomplished by issuing an appropriate command  
4 associated with the probed private network device.